

EXHIBIT 235

From: John Dowling <John.Dowling/KFF/US/Kidde@Kidde> on behalf of John Dowling
Sent: Wednesday, April 18, 2001 6:15 PM
To: Anne Regina
Subject: Re: EPA meeting: Comments

Anne,

you need to privately note Dave Spring's observations. Traditional exponents of centipedous maximus structures (i.e. chemists) need to be best placed to avoid the sudden, heavy footed assault and squishing by metallicus minimus species (i.e. engineers). (Make a note to give me a call in a day or so, to give us a chance to compare notes). Look forward to receiving those promised papers you referred to!

John D.

----- Forwarded by John Dowling/KFF/US/Kidde on 04/18/01 02:06 PM -----

David Spring

04/18/01 11:43 AM

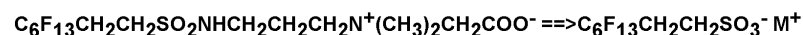
To: John
 Dowling/KFF/US/Kidde@Kidde
 cc: Peter
 Moore/KiddePLC/UK/Kidde@Kidde, Adam Chattaway/KiddePLC/UK/Kidde@Kidde
 Subject: Re: EPA meeting: Comments

John

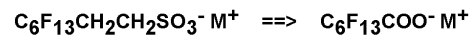
Thanks very much for the report and the notes on the EPA meeting on PFOS. At our end we will try to stay in close touch with Dr Ron Sheinson of the US NRL. We have sent him a copy of all the (external) literature on this topic that we have gleaned. He will probably be organising a test programme for the USN on alternatives. If there is anything we can do from here to help KFF with him and with/or the USN test programme, then please let us know. For example, are KFF working on any "training" foams that contain zero or low fluorine contents, and which may be of interest to the Navy?

Overall, I fear that this is the start of a thin end of a wedge for the telomer fluorosurfactants that the major Kidde foams companies use. Once a witch hunt starts over bioaccumulation of the perfluoroalkyl sulphonic acid and its salts, it is inevitable that attention will turn to the perfluoroalkyl carboxylic acids and their salts. And this will occur regardless of whether we are talking of branched chain fluoroalkyl groups (as produced by the 3M electrochemical process) or of straight chain alkyl groups (as produced by the telomerisation)

As regards telomer fluorosurfactants that we in Kidde use, my view is that things like Forafac will degrade in the environment to produce first of a polyfluoroalkyl sulphonate:



The degradation will then chop off the sulphonate group, followed by one of the methylene groups. But then it will stop at the stage of a perfluoroalkyl carboxylic acid, which does not have any hydrogen atoms on the carbon atom next to the carboxylate moiety for the bacteria etc to react with.



Thus our telomer fluorosurfactants will end up as a perfluoroalkyl carboxylic acid. The question is how toxic these perfluoroalkane carboxylates are and how bioaccumulative. Certainly there is a reference to perfluorooctane carboxylic acid (or salts) still being found in the soil of USAF bases over 10 after testing was finished. I guess these are the branched chain things from 3M. I doubt if straight chain/branched chain makes much of a difference in fluorocarbons (unlike the corresponding hydrocarbons). Nor will the actual chain length make a great deal of difference once there are already more than 4-6 carbon atoms in the molecule.

If these perfluoroalkyl carboxylic acids do get the chop environmentally, then I wonder about other telomer products. When I was an organofluorine chemistry research student, another guy at Durham was doing work on telomerisation of trifluoroethylene with iodine monofluoride. This would give you a fluoroalkyl chain with CHF groups every alternate carbon atom. This might provide sufficient "handle" for the bugs to get to work, so that they could chomp along the whole chain, and yet there might be sufficient fluorine atoms (1.5 per C) to give acceptable surface tension properties (?). Do such surfactants exist? Do we know if Ato & Ciba etc are looking into this area? They would be fools if they were not making plans now for alternative products.

best regards

Dave